

The Citrus Industry

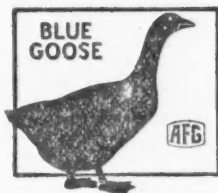
THE ONLY PUBLICATION IN THE WORLD
DEVOTED EXCLUSIVELY TO CITRUS FRUITS

Issued Monthly
Representative of every interest—
Representing no special interest

Vol. 3 No. 4

TAMPA, FLA., APRIL, 1922

15 Cents a Copy



Progressive growers who produce citrus of quality are entitled to a sales service that will get them the premium their quality deserves.

To growers of this type the American Fruit Growers, Incorporated, offers a service specialized in selling quality. By its accounts of sales it has proven to growers that efficiency in production pays best when linked up with efficiency in selling.

The American Fruit Growers is represented in Florida by a complete organization of citrus sales specialists headed by men of many years practical experience. Each member of the organization has been selected on the basis of his special knowledge of Florida citrus selling. This organization is supported by complete sales forces in the buying centers.

American Fruit Growers Inc.

ORLANDO, FLORIDA

The Latest Traffic Truck Meets Every Need of Florida Citrus Growers

With unlimited power, absolute speed control and perfect adaptability to Florida conditions, the new 6,000-pound capacity TRAFFIC TRUCK meets every requirement of the Florida citrus grower, whether in the grove or on the road.

No load is too heavy, no sand too deep for the capacity and pulling power of this wonderful and powerful new model Traffic, the greatest and most dependable pulling motor obtainable at any price.

The dual transmission with which this newest Traffic Truck is equipped gives it heretofore unknown capacity for pulling heavy loads over the worst roads known to Florida. With this dual transmission, the New Traffic has TEN SPEEDS FORWARD AND SIX SPEEDS REVERSE. This is an innovation which every driver of a truck will readily appreciate. Every grove owner who has seen the remarkable pulling power of the new Traffic Truck has expressed his gratification at its wonderful demonstration power. "Just what I have been waiting for," is a common expression of those who have witnessed a demonstration for the first time.

The needs of the citrus grower demand abundant power, perfect dependability, great capacity and positive efficiency in his truck equipment.

**THE NEW 6,000 POUND CAPACITY TRAFFIC
TRUCK MEETS HIS EVERY REQUIREMENT**

This new 6,000 Pound-Capacity Traffic Truck, delivered in Tampa, equipped with pneumatic equipment for

\$2450

With the dual transmission as an extra, this truck has ten speeds ahead and six reverse, making it the greatest pulling motor on the market at any price.

Write, wire or phone us for information or demonstration.

The Traffic Truck Sales Co.

State of Florida Distributors

1609-11 Franklin St.

TAMPA, FLA.

Phone 4820



You Cant Get Full Value from Your Grove With a Crop of Russets

Russets sell for little money. Top prices come from big, waxy-skinned beauties that can be produced only by thorough spraying.

If you have not already sprayed with our Lime Sulphur Solution, an application WITHOUT DELAY will protect your crop until the May-June combination application. Don't let RUST MITES reduce your profits THIS YEAR by lowering the grades of your fruit; sapping the vitality of your trees and reducing the size of your crop. Groves that are thoroughly sprayed, properly fertilized and well worked are the groves that pay.

Schnarrs

No expense is spared in the effort to develop quality in Schnarr Products. For 16 years they have been the Standard Spray Materials for Florida.

Schnarrs Spray Formula—the standard spray for white fly and scale insects. Will mix in ALL hard waters, and either Soluble Sulphur Compound or Lime Sulphur Solution may be added for rust mites.

Schnarrs Lime Sulphur Solution is a clear amber colored solution of the highest Baume test possible to produce.

Soluble Sulphur Compound can be used with safety in combination with Schnarrs Spray Formula and all oil emulsions. Used by the biggest growers in the State continuously for 14 years.

Schnarrs Bordol Mulsion a genuine bordeaux mixture with the highest percentage of copper combined with Schnarrs Spray Formula for melanose, white fly and scale.

Have a Profit Making Grove

April is the month when rust mites—the profit destroyers—begin their havoc. Every day they eat up many dollars in many groves. Protect your grove against this loss. Start now to control the rust mites with our Lime Sulphur Solution.

CONTROL MELANOSE WITH SCHNARRS BORDOL Mulsion

Place your orders for delivery early in May. Be ready to make the first application before it is too late to be effective. Special schedule and information supplied upon request.

Schnarrs Spray Formula Soluble Sulphur Compound or Lime Sulphur Solution

THE ORIGINAL COMBINATION SPRAYS FOR WHITE FLY,
SCALE AND RUST MITES.

You should have these materials on hand ready to use for the May-June spraying. Place your order at once. State acreage and size of your trees. Let us help you in determining your spray schedule. Ask for free copy of Schnarrs Spray Book and current price list.

Quick deliveries from our factories at Orlando and Florence Villa, warehouses and from dealers at principal distributing points in the State.

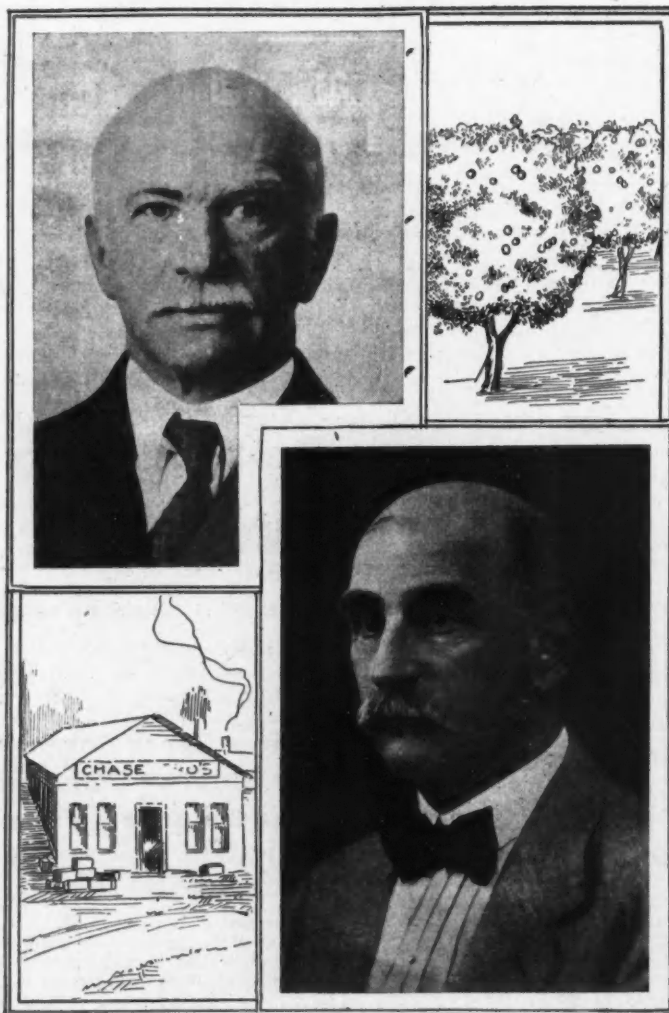
J. SCHNARR & CO.

Specialists in Sprays, Sprayers and Spraying
ORLANDO, FLORIDA

Tampa Warehouse:
2108 Fifth Avenue

Winter Haven

Leaders in the Citrus Industry



J. C. CHASE, (ABOVE)

S. O. CHASE, (BELOW)

Leaders in the Citrus Industry

Chase & Co.—J. C. & S. O. Chase

Among the citrus growers, packers and shippers of Florida, none are better known or bear a better reputation in the citrus world than J. C. and S. O. Chase, of Jacksonville and Sanford. For forty years they have been identified with the citrus activities in Florida and have been closely identified with every move for the betterment of the industry and the welfare of the growers. In many of these movements they have taken the initiatory steps and acted as leaders in campaigns which have meant much to the individual growers and to the industry as a whole.

As pioneers, the Chase Brothers were alert, aggressive, enterprising. As veterans, they are virile, energetic, successful. They have a record which stands as a monument to their foresight and breadth of vision.

Many Florida citrus growers now shipping through Chase & Co., packers and marketing agents for growers, will tell you that they can remember as boys that their fathers shipped their oranges through Chase & Co., with headquarters at Sanford, Fla.

S. O. Chase came to Florida from Pennsylvania in 1878, locating at Sanford; J. C. Chase moved to Sanford from New York City in 1884. As young men the Chase Brothers became interested in the growing of oranges, and meeting with success in the marketing of their own fruit, were requested by neighbors to act as marketing agents for them. This was the beginning of the organization now doing business as Chase & Co., Inc., which operates fruit and vegetable packing houses throughout the State of Florida and has bonded representatives in the 107 principal carlot markets of the United States and Canada.

Both J. C. and S. O. Chase have been active in practically every movement aimed at the betterment of the fruit and vegetable industry of Florida and have been leaders in many moves which resulted to the advantage of the Florida growers.

Space will not permit the enumeration of their many activities. Just three will illustrate:

The first car of oranges ever "stripped" was load-

ed by Chase & Co. It was shipped to Sioux City, Iowa. At that time many people thought it foolish and a waste of money to strip the loads. Now, "stripping" is general.

S. O. Chase was the first one to install tile drainage at Sanford, and thereby utilize artesian wells as a source of irrigation. This has done more than anything else for the development of the Sanford territory into the largest and most important truck producing section in Florida.

In the early days of the Sanford celery industry, Chase Brothers arranged with carlot customers in the Middle Western markets to reship by express Florida Celery in five and ten-crate lots to jobbers in the Western Markets, in order to demonstrate to the Western trade that Florida could produce good celery, Chase Brothers paying for both the celery and the express charges. This resulted in Florida Celery being sold in carlots in markets as far west as Los Angeles and San Francisco, California, Portland Oregon and Seattle Washington.

Their long, active, practical and successful experience in producing, packing and marketing has caused them to possess a store of knowledge which is a valuable asset to the Florida growers, as has been demonstrated on many occasions at hearings before railway officials and the Interstate Commerce Commission.

There is probably not a market in the United States or Canada which now uses Florida citrus fruit or Florida vegetables which does not now, or has not in the past, received Florida products in packages carrying the Chase name.

A record of approximately forty years in the packing and marketing of perishable products, heading an organization which continues one of the leaders in its line, is an enviable one.

Notwithstanding large business interests, their Isleworth Grove being one of the largest and best known groves in Florida, both brothers are active in civic affairs.

Crop Insurance

available to citrus growers
only through cooperation in
Florida Citrus Exchange

Only through the local associations of the Florida Citrus Exchange may any citrus grower obtain the manifest benefits of pooling.

Pooling as practiced by the leading, progressive Florida Citrus Exchange associations is the only practicable form of business and crop insurance.

Pooling does not mean a hit-or-miss joining of interests. Each grower obtains the average price for fruit only of the precise grade and size which he has to ship.

Pooling does not encourage communism; it is a co-operative principle which puts a premium upon better fruit and better effort. Every grower pools, whether or not he has the advantage of pooling.

Each grower must pool with himself if deprived of the privilege of pooling with his neighbors. Then, since it is inevitable in the marketing of any perishable crop that a certain percentage of shipments shall meet with unavoidable grief and misfortune, the grower who stands by himself must have fat years and lean years. He pools with himself over a period of years.

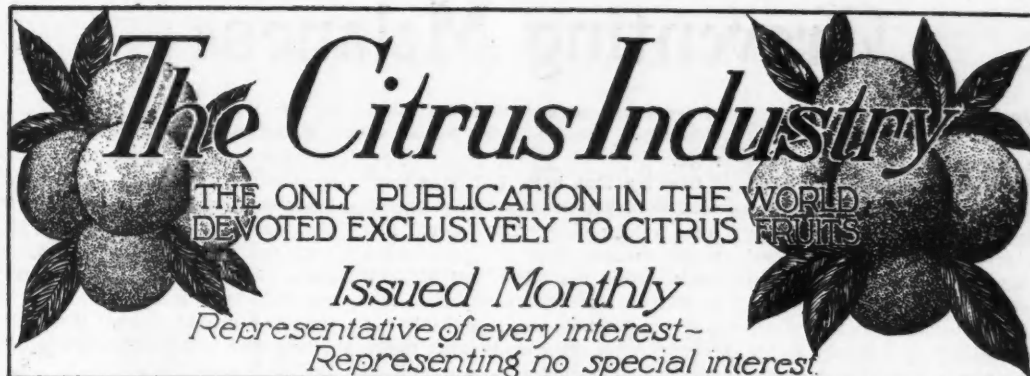
By pooling as practiced by the Florida Citrus Exchange associations, each grower gets his average bit of each season's fat and lean. The result in the end is eminently satisfactory. Perhaps in the long run each grower receives no more money, but there is all the difference between the steady income of the worker and the spasmodic income of the gambler, which builds little and often embarrasses much.

Ask the manager of any local Association, or of any Sub-Exchange, or write to the business manager of the Florida Citrus Exchange, Tampa.



FLORIDA CITRUS EXCHANGE





Vol. 3

TAMPA, FLORIDA, APRIL, 1922

No. 4

Wants Organization to Prosecute Fruit Thieves

The Citrus Industry is in receipt of a letter from Mr. C. W. Lyons of Tampa, state representative of the Gulf Fertilizer Company, and himself the owner of a large grove near Tampa, in which he urges the organization of a growers' association for mutual protection against the depredations of fruit thieves.

In common with many Florida citrus growers, Mr. Lyons has been the victim of fruit thieves and finds that as an individual it is hard to combat this lawless element, and he feels that an organization comprising the growers of all sections of the state should be called into existence to handle the problem.

The Citrus Industry takes great pleasure in presenting Mr. Lyons' letter, although regretting the necessity for the action which he urges. With fruit thieves operating as openly and as flagrantly as at present, it would seem that Mr. Lyons' plan offers the one real solution.

Mr. Lyons' Letter

Tampa, Fla., March 31st, 1922.

The Citrus Industry,

Tampa, Florida,

Gentlemen:

The matter of people stealing fruit, has come to my attention a great deal this season, and, realizing that the stealing of citrus fruits has reached such a proportion that in my opinion, the time has come for the citrus growers of Florida to unite, in some special effort to try and combat this menace.

As you know, the writer covers practically every corner of the citrus belt and as previously stated the complaints have been so numerous that

PLEASED WITH THE CITRUS INDUSTRY

Editor The Citrus Industry:

I wish to express my appreciation of your magazine. I have been very favorably impressed both with the high class articles on various phases of the industry and with the extremely high grade of advertising. I want to thank you for your efforts to improve conditions affecting the industry.

A. B. TUCKER.

Punta Gorda, Florida.

the thought occurred to me that if the citrus growers could form some association, the moral effect of such an association would have great bearing upon the matter of stealing fruit. Having given this some little thought, and to endeavor to bring the matter to a head, am writing you, trusting that you will give this communication some space in your valued paper with the view of calling the attention of the growers to the need of such organization. For example, we might apply and call this organization for temporary purposes, at least, The Citrus Growers Protective Association, which could be divided into county units thereby eliminating any great amount of work on the part of any one county.

Now, I am sure if this is put to the growers in the proper way that it will

be one time when the growers will be unanimous for an organization of the above character for the reason that outside of the actual value of the loss of fruit, the annoyance caused the grower is such that it is a detriment to our northern friends coming down here to buy groves.

At the present time I know of three negroes in jail in Tampa for the theft of fruit and they were so bold about it as to deliberately cut a six foot wire fence, back a truck up to this grove and make off with something like twelve boxes of oranges. The date this fruit was stolen, oranges were bringing \$4.50 a crate on the tree.

What prompted the thought of the above association was that different growers in different sections of the fruit belt have made various attempts to lay traps and catch thieves, but without much success, for the reason that they feel, as individuals they were unable to prosecute and get the desired justice due them; but on the other hand, the growers I have talked to feel that with such an organization they are bound to command the respect of all courts and thereby benefit the fruit districts, as well as the state itself.

In conclusion, will say that if the above article in your opinion would be of benefit, I would be very glad to hear comment upon same and as the State Horticultural Society meets in Lakeland on May 2nd, it may be possible that we would have sufficient time to formulate some plans and foster such organization during their meeting.

Very truly yours.

CHARLES W. LYONS.

Preventing Melanose

By J. G. Grossenbacher

In the summer of 1917 this disease became very severe and much more general than usual. Since that time there has been a gradual reduction in both its severity and its range, but even today it is more prevalent than it was before the freeze.

The sudden increase in the prevalence and intensity of melanose following the freeze of 1917 is probably chiefly due to the presence of an unusually large amount of newly killed wood resulting from the cold. Even in groves that were immediately pruned and where the pruning was finished by the middle of May there was an enormous crop of melanose showed up in June.

It seems evident that even though thorough pruning and removal of the dead wood takes away nearly all the infectious material there is enough left on dead fruit spurs and other tiny dead twigs to give rise to a severe development of melanose in late May and early June. In other words, even thorough pruning is not a practical control measure for the prevention of this disease.

The extra severity of this disease in 1917 and 1918 induced Mr. J. R. Winston (Pathologist of the U. S. Department of Agriculture) to conduct extensive laboratory and field studies of melanose and its development that eventually resulted in a spray schedule giving a practical control of the disease. He found that melanose becomes infectious to new growth and fruit from the latter part of April to the middle of May, and that one or two applications of Bordeaux-oil given just before the infectious period gives around 90 per cent control of prevention.

It seems that the occurrence of light showers or rains during late April and up to the middle of May affords the necessary conditions for the spread of this disease to the tender new growth, leaves, and fruit. A delay of the rains delays the spread of the trouble, but doubtless extra heavy dews afford suitable conditions for a lesser development of the disease especially in the lower lands, in case rains do not occur during the main infection period of May.

To prevent melanose from developing on the new growth and fruit it is necessary to spray with Bordeaux-oil preceding the infectious period so that all of the most vulnerable parts

of trees are covered with the fungicide when the infectious period arrives.

Growers that have had experience with Bordeaux know that it stays on trees a long time. They would naturally assume that an application made during the latter half of April is still on trees and effective in late May. In the main that it probably correct but since much new growth comes out in that period it is also evident that this is not covered by the application made before, even tho the fungicide may still be abundant on the growth that was out at the time the spraying was done. Not only that, the surface area of the young fruit at least doubles during the period in question. By making an application, therefore, in the latter part of April for the prevention of melanose may not prove very satisfactory on account of the length of the infectious period and because so much new surface develops in that interval.

In the spraying tests I made during the seasons of 1913 and 1914 for the prevention of scab it seemed that, in cases where the last scab spraying was made with Bordeaux, there was a marked effect on melanose control while in 1915 the result on melanose was negligible. Viewed at this distance and in the light of Mr. Winston's more recent results it seems likely that in some seasons melanose infections occur early and in others much later. In other words, there are occasions that if the second scab spraying is made with Bordeaux-oil about two weeks after the first bloom spraying melanose infections are greatly reduced while in some years the second application for scab, even when Bordeaux-oil is used, has practically no effect in melanose prevention.

In view of the fact that this season appears to be earlier than some it seems probable that the second spraying made for scab might also be effective against melanose if Bordeaux-oil is used in place of lime-sulphurs solution. This, of course, would be applicable only where melanose was abundant enough the past season to warrant a melanose spraying this year. Then, to cover the infectious period fully, it is wise to make a special application for melanose during the first half of May. As a matter of fact, however, even that would not be for melanose only because the Bordeaux-oil would also take care of the whitefly and scale dose to be given

at that time.

As mentioned in Citrus Leaf No. 16 the groves in the storm-damaged sections of the west coast should have at least one melanose application. The cheapest time to make that is along with the spraying for whitefly and scale. It seems that the first flight of the whitefly is going to be early this time and on that account it will fit in very nicely with a melanose application to be made in early May.

In concluding this discussion of spraying to prevent melanose, I wish to bring the main items together. In the first place, the second scab spraying on grapefruit trees that show considerable melanose should be made with Bordeaux-oil. That brings this in the first half of April. These groves as well as orange groves having a prospect of considerable melanose, should be sprayed with Bordeaux-oil during the first half of May to control whitefly and scale and to prevent melanose.

MAY BUILD NEW PACKING HOUSE (Lake Wales Highlander)

The Manatee Fruit Co. of Tampa and Bradentown has bought from J. F. Townsend three lots, including the full block between the ice plant and the Citrus Exchange packing plant and bordering on both Seaboard and Coast Line tracks at Lake Wales. The price paid was \$12,000, setting a record for property of that type in this city and indicating that outsiders are looking forward to the town growing.

Mr. Townsend does not know Mr. Preston's plans but understands he intends to put up a packing house there during the summer. As Mr. Townsend has been given 60 days in which to move it is likely that building this summer is contemplated.

This house would make the third packing house for Lake Wales and rumors are on foot that another big independent shipper plans to enter this field soon and is looking for a site. The Manatee Fruit Co. has been one of the big factors in Manatee county where they own large grapefruit groves but so far as known they have no special grove interests here and would probably act as independent packers and shippers, seeing the future this town has as one of the great citrus centers of the state.

Farming is a business. Business men keep accounts. Are you a business farmer?

Wants Great National Agricultural University

Mr. Otto C. Lightner, president of the Lightner Publishing Co., publisher of a string of agricultural trade papers, is fostering a movement for the creation of a great national university of agriculture, and has addressed the following open letter to Secretary of Agriculture Wallace:

Open Letter to Henry Wallace.

Mr. Lightner Urges Secretary of Agriculture to Make Bold Move for Great National University of Agriculture. College of Farm Marketing, a Feature Suggested

Chicago, Ill., March 8, 1922

Hon. Henry C. Wallace,
Secretary of Agriculture,
Washington, D. C.

Dear Mr. Secretary:

The Disarmament Conference is over, and its results will mean a saving in Governmental expenditures of several hundred million dollars a year.

Now is the time to make a bold strike for a great National University of Agriculture.

You should ask Congress through the Administration for forty million dollars appropriation, the cost of one battleship, to build the greatest agricultural seat of learning in the world.

We have West Point and Annapolis, both of which will continue to cost millions, to train our young men in the arts of war.

Why then should we not have a similar institution to train our young men—and young women—in the arts of peace?

The National University of Agriculture should be located in Washington, probably on the plot belonging to the Department of Agriculture extending over into Virginia, where all the facilities of the Capital may be at the disposal of the students.

Each Congressman and Senator and each Cabinet member should have the privilege under the act, of appointing one young man and one young woman to attend the University at Government expense and this fine army of young Americans will soon be going out into the country each year to assume leadership among the great farming classes of America. Also every County Agent should be given a year's course at the university.

In addition there should be another feature, and that should be a College of Farm Marketing. The best professional experts in the country should be included among the instructors and lecturers of this school which would turn out practical trained men to take positions as farm marketing experts. Here we would practically be turning out a new profession of men—organizing and perfecting a coming science.

There are many additional features that could be suggested to such a plan. I could go on for hours to outline its manifold advantages to Agriculture.

Here Mr. Secretary, is an opportunity to do for Agriculture and the future of American farming the greatest single act in its history.

It will be a monument to your service as head of the Department and will mark an epoch in the progress of agriculture.

We look to you in your official capacity for leadership in this movement.

Very courteously yours,

OTTO C. LIGHTNER.

The Citrus Industry

ISSUED MONTHLY

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PROTECT THE FRUIT.

Elsewhere in this number will be found an article by Mr. C. W. Lyons, of the Gulf Fertilizer Co., calling attention to the frequent thefts of fruit from citrus groves, and advocating the organization of a Growers Protective Association to deal with the situation.

It appears to The Citrus Industry that Mr. Lyons' stand is well taken. As individuals, the citrus growers find much difficulty in handling the problem. While their losses in many cases are heavy, the cost of prosecution in cases of this kind are frequently even more costly and delays in the courts are not only annoying, but frequently appear to be entirely too prolonged. As individuals, the growers find it hard, if not impossible to remedy this situation. Mr. Lyons believes that an association of growers would find it much easier to handle such cases with vigor and dispatch.

One or two convictions, accompanied by heavy fines and jail sentences for the offenders, would tend to greatly reduce the losses and annoyance from this source and in a short time would put an effectual end to the practice which has been so prevalent, particularly during the prevailing high prices of oranges during the past few weeks.

We believe that Mr. Lyons has struck a popular chord, and one to which the growers of the state will respond with alacrity. Certainly none will deny the need for some prompt and vigorous action to put an end to the practice which is costing Florida grove owners so much, and Mr. Lyons appears to have found the solution.

The Citrus Industry will be glad to hear from other growers along this line.

BIG GROVE TRANSACTION.

Announcement of the sale of Lucerne Park Fruit Association to the DiGiorgio Fruit Corporation, marks what is believed to be the largest single deal in citrus groves ever made—certainly the largest deal of the kind in the history of citrus in Florida.

This tract of 1700 acres, mostly in bearing grove of the choicest varieties of citrus fruit, located in the very heart of the finest citrus section of Polk county, is one of the most valuable tracts, acre for acre, of any grove of like age in

that section. It has long been famous for its excellence of location, character of soil, perfection of planting and culture and the high quality of the fruit produced.

The acquisition of this tract by the DiGiorgio interests gives that corporation 3,000 acres of bearing citrus groves in Florida and adds still more to its importance as a factor in Florida citrus circles.

The consideration in the transaction is not given, but as this grove is known to be one of the most valuable in the famous Polk county section, it is safe to assume that the purchase price was in keeping with the general excellence of the property.

Mr. D. C. Gillett, who had charge of the development of Lucerne Park will continue as president of the association, with B. J. Christman as vice-president, V. B. Newton as treasurer and LeRoy B. Giles as secretary.

This transaction is one of the notable events of the present season in Florida citrus circles.

FARM IMPLEMENT SITUATION

During the period of post-war readjustment, farm implement and farm tractor manufacturers and dealers have been "hard hit" along with the producers of agricultural products. Low prices for farm products have resulted in a slackening of buying on the part of the farm producers. Save in the citrus producing sections, where the business depression was less generally felt, sales of costly farm implements and tractors has largely fallen off. In the wheat and corn producing regions, in the cotton, rice and sugar sections, sales of these implements has been reduced to the minimum.

As a result of this condition, many manufacturers report heavy losses, amounting in the case of one big concern, to the vast sum of nine million dollars last year.

But this period of readjustment has forced the price of farm implements and tractors down to a level where, cost considered, the selling price is at or below the pre-war level. That is, the margin between the actual cost of production and the retail price to the user, is as narrow (or narrower) now than before the war. Whereas the cost of production is still 65 per cent above pre-war cost, the selling price is but 50 per cent above pre-war price.

The belief exists that the low point in selling cost of such implements has been reached—at least until the cost of manufacture can be reduced. In view of this situation, it would appear that the agricultural producer can no longer afford to delay the purchase of needed farm equipment. The present season should see a resumption of buying on the part of the agricultural producer.

There is room on nearly every grove property in Florida for a few trees of other sub-tropical fruits. Avocados, mangoes, figs, persimmons, loquats, surinam cherries, grapes and berries should be found on every rural home. Their fruits will add largely to your comfort, and if properly cared for, will help to swell your income.

CUTTING DOWN DEPARTMENT OF AGRICULTURE

From The Farmer

Delegates to the recent national agricultural conference in Washington were rather surprised to find in that city a rather definite public opinion that strong efforts will be made, in connection with the proposed reorganization of governmental departments, to take away from the U. S. Department of Agriculture a large portion of its present organization. For instance it is proposed to transfer the Bureau of Markets, the largest bureau of the Department, over to the Department of Commerce. It is proposed also to transfer the Bureau of Forestry to the Department of the Interior. There is a possibility of transferring to other departments the Bureau of Public Roads and the Weather Bureau. All of this cutting-up process is calculated to weaken the Department of Agriculture and to strengthen other departments.

If we correctly sense the opinion of farmers and farm leaders, any effort thus to weaken the Department of Agriculture would meet with great disapproval. These various bureaus very properly belong to the Department of Agriculture and their transference would serve no public good. On the contrary, the transfer of the Bureau of Markets would take away one of the most important functions of the Department of Agriculture. Likewise the transference of the Bureau of Forestry to the Department of the Interior would in all likelihood lead to the exploitation of our remaining forest resources, which exploitation was narrowly avoided at the time of the Pinchot-Ballinger episode. Forestry work under the present plan is more certainly for the public good as it is now administered than it could possibly be in any other government department. The same thing can be said of the work of the Weather Bureau and the Bureau of Public Roads.

The farmer needs the U. S. Department of Agriculture a little more at this time than ever before in history. He should bitterly oppose any plan to weaken this department.

When men of the stamp of Joseph DiGiorgio invest in 1,700 acres of bearing citrus grove in Florida, it attests the confidence of men who know in the permanence and growing importance of Florida as a citrus producing state.

Many new packing houses, both Exchange and Independent, will be built in Florida this summer. They will be needed to care for the ever-increasing production of citrus crops in the state.

Plan to attend the annual meeting of the Florida State Horticultural Society at Lakeland, May 2, 3, 4 and 5. A program of unusual interest is promised by President Hume and Secretary Floyd.

A citrus grove is not made in a day nor changed in a night. Remembering this, it behooves the planter to make his selection of varieties with intelligence and due regard to his peculiar conditions of soil type and drainage, and to make his plantings with care.

CALIFORNIA WANTS CROP INSURANCE

From the California Citrograph

In a time of crop disaster such as the present, some form of crop insurance seems desirable.

Many producers of perishables in various sections of the United States have from time to time brought up the question of mutual crop protection.

In Iowa mutual hail and cyclone insurance has proven very successful.

It is reported that many citrus growers in Florida this year have taken out crop insurance with a firm outside the state's boundaries.

Mutual crop disaster insurance in California would hardly prove feasible for the loss would have to be paid by virtually the same people who suffered the frost damage. But it seems possible that some out-of-state regular line insurance company, as in the case of Florida, could be induced to interest themselves in the hazards of the California citrus grower.

The policies which the Florida growers have sought protection under this year cover only the fruit on the tree and do not become effective until seventy-two hours after the policy has been issued, thereby protecting the insurance company from any last minute applications when a freeze has been predicted by the weather bureau.

It would seem desirable that the vast citrus properties of California should be safe-guarded, if some feasible plan could be worked out to do so, equally as well as her extensive investments in packing houses and incidental equipment necessary to prepare the fruit for market.

Too many varieties in a grove planting are confusing and not conducive to best results. At the same time, the wise planter will provide for early, medium and late ripening oranges, together with the proper proportion of tangerines and grapefruit. Beyond this, his horticultural endeavors should extend to lines other than citrus.

The "cheap" implement, be it tractor, sprayer or what not, is dear at any price. The citrus grove deserves and demands the best—not necessarily the most expensive—but the best.

"Old Dobbin"—or the mule—still has a place in the scheme of existence; but in carrying on grove operations of any magnitude, it is more economical to feed the tractor and the truck.

The grower who fertilizes with liberality, sprays with intelligence, prunes with care and cultivates with diligence, is the one whose profits at the end of the season outstrip those of his less painstaking neighbor.

The grower is known by the quality of fruit his groves produce. Fine fruit cannot be produced by slip-shod methods.

The muck lands of the Everglades seem destined to become the scene of numerous plantings of avocado groves.

Nurserymen are preparing for a season of heavy buying by planters next year.

Economy of Thorough Spraying

By J. G. Grossenbacher in Citrus Leaf

When I first came to the State, in 1912, spraying to control pests and prevent diseases in groves was not commonly practiced, tho some of the leaders in the business had come to recognize that it pays to spray. Mr. Yothers had demonstrated the fact that pest control by spraying is both practical and economical but on account of the idea that the friendly fungi naturally control the pests his demonstrations appeared to have had but slight effect on growers generally. His renewed efforts along that line along with the help of others as well as that of myself soon resulted in more than doubling the acreage of sprayed grove. At present practically all progressive growers are not only convinced that it pays to spray but they are actually spraying and finding that it does pay.

The difference in price between bright and rusty fruit has also become greater. The argument that rusty fruit is better and that buyers prefer it has been forgotten. There is always a scramble for the brightest crops. However, the fact remains that a very high percentage of the Florida fruit shipped is still rusty. The northern markets still discriminate against this large volume of discolored fruit.

What is the trouble with the spraying that is done? Why should we still have so much rusty fruit? It is readily seen that if as much as 90 per cent of the crop shipped were bright the net returns to the State would be increased by about a third. I will not endeavor to figure out the additional amount of money that would return to citrus growers. Figures as large as that too often are so large that they are largely meaningless to most people.

I am not going to advise growers to make more applications per year, for many of them are spraying more often now than necessary to get 85 to 90 per cent bright fruit. During the past three years I have been advising many growers to spray fewer times and double up on the matter of thoroughness.

It seems to me that the ideas to emphasize among growers now are thoroughness and timeliness of application. Of these, the former is by far the most difficult to attain. A grower can be easily advised in regard to the right time to spray for the various pests and the few preventable diseases, but it is quite a different

matter to increase the effectiveness of spraying to a point where fewer applications may be made and yet secure better results. The spray schedules to be had for the asking enable a grower with a moderate amount of experience to determine the time to spray and what to use but nothing short of personal effort insures thoroughness in the work.

I have several illustrations of the difference resulting from different degrees of thoroughness during the past few years. One example, somewhat generalized, brings out the main points in a clear-cut manner. One grower makes four applications per season on his orange grove: two of lime-sulphur solution and two of oil emulsion, the other to a similar grove gives six applications: two of oil emulsion and four of lime-sulphur. The first markets around 90 per cent bright fruit and the second about 55 per cent brights. In the latter case the cost of spraying was almost a third greater than in the former. In these instances the crops were around 3000 boxes each. The man spraying four times got around 2700 boxes of bright fruit and 300 boxes of russets. The other grower, spending much more for spraying, shipped 1650 boxes of brights and 1350 boxes of russets. At the present time the average difference in the price for brights and russets is probably considerably over 50 cents per box, but in this illustration we will assume a difference of 50 cents. Assuming a selling price of \$2.00 for the bright fruit on trees, the russets bring only \$1.50. The result brings the 90 per cent grower around \$5850 for his 3000 boxes, while the 55 per cent grower gets only \$5325 for his 3000 box crop. Fertilization and other grove expenses were at least as high in the 55 per cent crop as they were in the other and the spraying expense was higher. Therefore, the net returns of the 90 per cent grower were at least \$525 more for the season. That additional net enables the one grower to get more comfort as well as enjoyment for his efforts. There is no gain-saying the fact that a progressive grower has additional joy added to his life by the mere fact of growing specially fine fruit. His standing among his fellows is better and he is or becomes a leader in his community.

From this comparison of net returns on two small groves it is evident that a grower with a crop of 10,

000 boxes may have an additional net of \$1750 for his year's efforts by special attention to thorough and economical spraying. In other words, the net increase of 175 per 100 boxes may be taken as an average increase to be gotten from thorough spraying as compared with returns from the usual kind of spraying.

In this connection the question arises: what constitutes thorough spraying, and what is the difference between that and the usual spraying? These questions are not as difficult to answer as it may seem. In the first place, the "acid test" of spraying is to examine sprayed trees before they have finished dripping to see about what percentage of the leaves are thoroughly wetted underneath. This should preferably be done on grapefruit trees that are not over twelve feet high so that a considerable portion of the leaves may be examined. Just after the spraying of such a tree has been finished turn up at least a hundred leaves in various locations on a tree, making note as to whether the under surface is dry, partially wet, or fully wet. If less than three-fourths of the leaves examined are fully wetted the job is unsatisfactory; it has not met the acid test satisfactorily, and your results from the work will not put you in the 90 per cent class. The usual spraying wets only a third to a half of the leaves on the underside. If your spray crew fully wets 80 per cent of the undersides of grapefruit leaves, you can count on their wetting at least 90 per cent of the orange leaves.

Three to four applications that actually meet this acid test will give you around 90 per cent bright fruit, i. e. as far as rust mite damage is concerned even tho only two of these doses were sulphur sprays: one just following the bloom and another in mid-summer.

Perhaps the most harmful attitude in spraying is to assume that even tho you are not doing the work this time to meet these tests you will get them next time. That attitude is sure to get you a big bunch of russets. The correct antidote for this delusion is to spray each and every time just as tho you never expected to spray those trees again. The application of the wetting test along with the dominating idea that you cannot make up for slack work will put you in the 90 per cent class.

Program State Horticultural Society

The following preliminary program for the Thirty-Fifth Annual Meeting of the Florida State Horticultural Society to be held in Lakeland, May 2, 3, 4 and 5, has been issued by President Hume and Secretary Floyd. This promises to be the best meeting ever held by the society and every horticulturist in the State should not only attend, but should become a member of the society. This may be done by merely sending \$1 membership fee to Mr. B. F. Floyd, Secretary, Box 719, Orlando, Fla.

Preliminary Program:

Address—Protecting Florida's Horticulture—A. G. Brown, Gainesville.

Report Committee on Citrus Fruit Products—S. S. Walker, Tampa; Estelle Bozeman, Tallahassee; Caroline Moorhead, Tampa.

Report Committee on Grove Machinery—L. H. Kramer, Lake Wales; S. P. Durrance, Avon Park; Frazier Rogers, Gainesville.

Report Committee on Citrus Varieties and Stocks—F. M. O'Bryne, Gainesville; T. Ralph Robinson, Terra Ceia.

Report Committee on Packing and Shipment Citrus Fruits—C. W. Barnes, Winter Haven; J. L. Delamenter, Lake Alfred; J. W. Andrews, Tampa.

Report Committee on Citrus Fruit Quality—E. S. Williams, Ft. Pierce; Geo. V. Leonard, Hastings; C. C. Commander, Florence Villa; A. H. Brown, Manatee.

Report Committee on Citrus Tree Conditions—R. E. Lenfest, Winter Park; Lindsey Heimberger, Lakeland; E. F. DeBusk, Tavares; A. M. Tilden, Winter Haven; H. E. Cornell, Winter Haven; Franklin Miles, Ft. Myers. Address—Control of Florida Red Scale—W. W. Yothers, Orlando.

Address—The Improvement of Citrus Varieties Thru a Bud Supply Progeny Orchard—T. Ralph Robinson, Terra Ceia.

Address—The Citrus Black Fly—Reginald Hart, Gainesville.

Report Committee on Avocados and Sub-Tropical Fruits—H. E. Stevens, Ft. Myers; H. O. Sebring, Sebring; John Morley, Lake Alfred; C. C. Shooter, Earleton.

Report Committee on Grapes—Chas. Dearing, Willard, N. C.; E. L. Lord, Gainesville; H. T. Fisher, Eustis.

Address—The Growing of Grapes in Florida—Chas. Dearing, Willard, N.

C.

Report Committee on Yards and Lawns—W. A. Cook, Oneco; Miss Sarah Partridge, Tallahassee; Wm. Gomme, Bartow.

Report Committee on Ornamentals—A. E. Cline, Altamonte Springs; F. W. Fletcher, Orlando; W. F. Nehrling, Leesburg; Mrs. A. B. Whitman, Orlando.

Address—Asparagus Plumosa as an Ornamental—A. E. Cline, Altamonte Springs.

Address—Soft Bodied Plants for the Florida Flower Garden—F. W. Fletcher, Orlando.

Address—State Beautification and Conservation—Mrs. A. B. Whitman, Orlando.

Report Committee on History and Necrology.

Report Committee on Patron Membership.

Report Committee on Annual and Perennial Membership.

Report Committee on Legislation.

Other Meetings

First Annual Meeting Former In-

spectors Florida State Plant Board.

First Annual Meeting Florida Florists Association.

Call Meeting Florida State Nurserymen.

Headquarters.

Florida State Horticultural Society, at Hotel Thelma. Florida State Florists Association at Elks Hotel. Former Inspectors Florida State Plant Board, at Tremont Hotel.

Entertainment.

Exhibit of Flowers and Foliage Plants. Exhibit of Citrus Fruits. Exhibit of Diseases and Pests by State Board. Motorcade to Ridge Section.

Railroad Rates.

One fare and one-half for round trip from all Florida points, subject to presentation of identification certificate at time of purchase of ticket. Identification certificate can be obtained from Bayard F. Floyd, Secretary Florida State Horticultural Society, Box 719, Orlando, Florida. Tickets will be sold April 29 to May 4, with final limit May 9th.

Important Patent Suits Settled Out of Court

Skinner Machinery Company Accepts \$19,378.46 Damages From Standard Grower's Exchange

The two important patent suits which have been pending between the Skinner Machinery Company of Dunedin, Florida, and the Standard Grower's Exchange have been settled out of court.

Prior to this settlement one suit had been heard in the Federal court in Jacksonville, Florida and appealed by the Standard Grower's Exchange. The appeal had been heard but no decision had been handed down. This suit was in reference to infringement on a sizer patent, in which the Skinner Machinery Company was plaintiff.

The second patent suit in which the Skinner Machinery Company was also the plaintiff, was for infringement on a roller dryer patent. This suit had been filed and answer made, but the case had not been heard.

In order to reach a quick settlement in both suits and save lengthy and costly litigation, the Skinner Machinery Company has compromised in both cases, accepting from the Standard Grower's Exchange the sum of \$19,378.46 as damages to them and loss of profit from the manufacture and sale of these two packing house machines by the Standard Grower's Exchange. The number of these machines manufactured by the defendant was estimated at thirty-seven and damages at \$500 each machine making a settlement of \$18,500 and costs, amounting to \$838.46, with total damages at \$19,378.46.

By the terms of this settlement the Skinner Machinery Company will issue a license plate for each of the machines made by the Standard Grower's Exchange, whether still in the possession of the Exchange or sold to other persons. These license plates authorize the continued use of the machines.

Committees Named for Horticultural Meet

President Harold H. Hume of the Florida State Horticultural Society, which holds its annual meeting this year at Lakeland, May 2, 3, 4 and 5, has announced the following standing committees for the year.

The Lakeland meeting promises to be one of great interest and President Hume and Secretary Bayard F. Floyd are busily engaged in the preparation of the program and the assignment of topics to leading horticultural experts and growers of the state.

The list of committees announced is given below:

Citrus Fruit Quality

A. B. Michael, Wabasso; A. H. Brown, Manatee; Geo. V. Leonard, Hastings; C. C. Commander, Florence Villa.

Citrus Tree Conditions

R. E. Lenfest, Tampa; A. M. Tilden, Winter Haven; H. E. Cornell, Winter Haven; Lindley Heimberger, Lakeland; Dr. Franklin Miles, Ft. Myers; E. F. DeBusk, Tavares.

Packing and Shipment of Citrus Fruits

James L. Delameter, Lake Alfred; C. W. Barnes, Winter Haven; J. W. Andrews, Tampa.

Citrus Fruit Products

S. S. Walker, Tampa; Mrs. Caroline Morehead, Tampa; Miss Harriet B. Layton, Tallahassee.

Citrus Grove Machinery

L. H. Kramer, Lake Wales; S. P. Durrance, Avon Park; Frazier Rogers, Gainesville.

Citrus Varieties and Stocks

E. E. Evans, Leesburg; T. Ralph Robinson, Terra Ceia; F. M. O'Byrne, Gainesville.

Grapes

John Morley, Lake Alfred; Prof. K. C. Lord, Gainesville; H. T. Fisher, Eustis.

Avocados and Sub-Tropical Fruits

H. E. Stevens, Ft. Myers; H. O. Sebring, Sebring; W. D. Carrier, Crooked Lake; C. C. Shooter, Earleton.

Ornamentals

A. E. Cline, Altamonte Springs; F. W. Fletcher Orlando; W. F. Nehrling, Leesburg; Miss Elizabeth Skinner, Dunedin.

Yards and Lawns

W. A. Cooke, Oneco; Miss Sarah Partridge, Tallahassee; Wm. Gomme, Bartow.

Exhibits

Wm. Gomme, Bartow; N. A. Reason, Oneco; F. A. Knul, Tampa; Frank

Stirling, Gainesville.

Publicity

A. A. Coult, Jacksonville; Edgar A. Wright, Tampa; S. L. Frisbie, Tampa; Frank Kay Anderson, Tampa.

Transportation

E. B. O'Kelley, Jacksonville; C. A. Martini, Tampa; H. S. McLendon, St. Augustine.

History and Necrology

W. L. Floyd, Gainesville; W. W. Yothers, Orlando; F. M. O'Byrne, Gainesville.

Legislation

M. E. Gillett, Tampa; A. H. Brown, Manatee; F. D. Waite, Palmetto; I. A. Stewart, DeLand; W. J. Krome, Homestead.

Membership

B. F. Floyd, Orlando; Frank Stirling, Gainesville; W. H. Brokaw, Orlando; Mrs. G. W. Peterkin, Lakeland; Max Waldron Crooked Lake; S. F. Poole, Lake Alfred; C. H. Thompson, Winter Haven; Alfred Warren, Ft. Pierce; H. D. Bollinger, Miami.

Patron Membership

B. L. Hamner, Tampa; F. C. Gardner, Lake Alfred; L. B. Skinner, Tampa; W. S. Hart, Hawks Park; C. E. Stewart Tampa; C. D. Mills, Jacksonville; J. C. Chase, Jacksonville; J. H. Ross, Winter Haven.

DUST WITH SULPHUR TO KILL RED SPIDERS

Red Spiders are beginning to do considerable damage in various parts of the state. They attack a variety of plants, but sulphur will control them. Peas, strawberries, beans, citrus, cotton, violets and camphor are probably the most liable to attack of the domestic plants.

Infested plants become gray and dried up in appearance and finally turn yellow and die. Strawberries turn brown and remain small and hard. If examined closely infested plants, particularly the under sides of the leaves, are found covered with a web of fine silk under which the minute yellowish mites can be seen with the naked eye. Under a good lens one can readily discern the eight-legged adults which are from red to green in color, the bright red eggs, and the white skins which were cast off when the spiders molted.

These spiders belong to a group called spider-mites, which includes the rust mites of citrus. The best rem-

edy for any of these spiders, or mites, is some form of sulphur, according to Professor J. R. Watson, entomologist of the Florida Experiment Station.

Use either free sulphur, or some of its compounds, applying it dry, or in the form of a spray. Free sulphur is one of the best remedies against red spiders. It is somewhat slower in its action than some compounds of sulphur, often taking two to three days or more to do its work, but it remains active for a long time, frequently two or three weeks, and usually kills the mites.

Sulphur can be applied dry and be driven into the citrus trees or strawberry beds by means of a blower or duster. In the strawberry patch it can be applied by hand, or shaken into the vines thru a closely woven cloth or a perforated can.

It is advisable to mix sulphur with hydrated lime (3 to 1). This lime may be made by adding 32 pounds (4 gallons) of water to 100 pounds of quicklime. Mix the lime and sulphur thoroly. It is best to apply the dust at night or early morning, in order that it may stick better.

The dust is particularly effective on plants like strawberries where the leaves lie close to the ground.

CLOSING OUT THE JESSAMINE GROVES NURSERIES STOCK

(Dade City Banner)

W. J. Ellsworth, proprietor of the Jessamine Groves Nurseries, decided some time ago to retire from business and has been selling out his nursery stock. He announces this week the closing out of what stock is left at half price.

Mr. Ellsworth established his nurseries in 1887, thirty-five years ago, and probably his business is the oldest established of any in Pasco county with the exception of that of the Coleman and Ferguson Company. Mr. Ellsworth built up a reputation for square dealing and fine stock and has supplied the trees for many groves, not only in this vicinity but all over Florida and beyond. In the conduct of the nurseries he has had the assistance of L. P. Lipsey, an equally experienced horticulturist. Both are inclined to ease up on strenuous labor now and consequently close the nursery business.

Mr. Ellsworth and W. N. Pike own a large and valuable grove at Jessamine Gardens adjoining their homes.

A farm sewerage system does cost something, but so do the visits of the doctor and of the undertaker.

Evolution of the Fruit Branding Machine

Florida citrus growers have been watching closely for three seasons the progress of the American Fruit Growers Incorporated in branding its general trademarks on the skin of oranges and grapefruit. "Will it pay a premium?" was the principal question to be decided. So decisive has been the answer in the affirmative as shown by the accounts of sales that beginning next season the American Fruit Growers will not only brand their trademark of highest quality, the "Blue Goose" emblem, on Florida fruit, but will also brand their general trademark, a shield and initials "AFG" on fruit of dependable quality. The grower's brand is also marked on the fruit by the electric stamping machine.

Back of all this lies a story of a ten year's struggle of a little group of in-

Hooked up with the largest individual organization distributing a complete line of fruits and vegetables Ahlburg and his associates can scarcely see the limit to the uses to which their machine can be put.

The ideal fruit marking machine must meet some rather exacting requirements, it must work at high speed so that it will not interfere with grading and packing; it must be compact and capable of fitting into the present grading and packing machinery; it must mark fruit indelibly without injuring it and without making the mark repellent to the consumer.

Frank Ahlburg first became interested in attempts to brand fresh fruits early in 1913 when he was on the Pacific Coast. He was in contact with fruit growers and came to the conclu-

violet rays were directed on the skin of the fruit through stencils. Securing a pledge of assistance from the Kaiser Wilhelm Institute in Berlin, he went to Germany. German scientists interested themselves in his idea and many experiments were conducted for several months. The ultra-violet theory was sound as far as quick marking of the fruit was concerned, but it was found that the apples thus branded would spoil.

Then Mr. Ahlburg tried a burning glass—it branded very well, but it burned the fruit. About that time he began to believe that heat had as much to do with the branding of fruit as light. He returned to New York and there began experimenting with a wire, taking heat from electric light sockets. He experimented several months with apples. His experiments showed him that heat was a better branding agent than light—the surface of apples was particularly adapted to this kind of branding. Each apple is covered with an extremely thin coating of vegetable wax and Mr. Ahlburg found that when heat was applied to this wax a distinctive color was developed in the skin of the fruit. The wax was also condensed and hardened where effected by the heat making an indentation appear on the apple skin.

To make a distinct brand on the skin of the fruit without injuring it he found could be done only within a limited range of temperature—the temperature required to do the branding varied according to the temperature of the fruit itself.

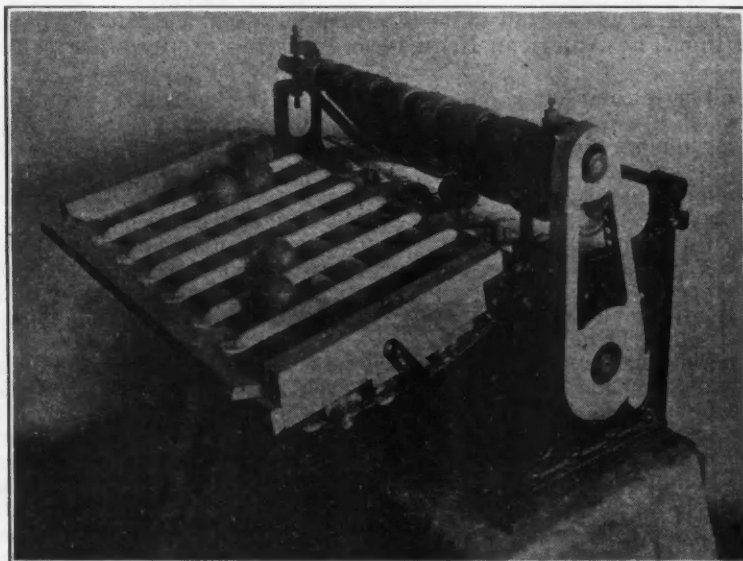
Confronted with this problem of heat control, Mr. Ahlburg spent several months in an attempt to synchronize the heat of his branding wire with the temperature of the fruit to be branded.

In 1914 he went to Alaska. There he had a silversmith make him a small branding apparatus. He practiced heat control still using the heat from the electric light sockets and became so expert that he could make a very distinct white mark on the apple without injuring it.

He realized that he was very far from having made the branding of fruit commercially practicable because the product could not stand the expense of hand branding unless it was sold purely as a novelty.

Coming out of Alaska in the fall of 1914, Mr. Ahlburg went to the famous Hood River apple section in the Northwest to continue his experiments. He built a machine for branding. This

(Continued on Page 16)



The Perfected Branding Machine

ventors to adapt to the oldest industry in the world, agriculture, the principles of modern merchandising by trademarking the product.

After building seventeen different types of branding machines, junking equipment that cost over \$35,000.00 and going on the rocks financially a half dozen times, Frank Ahlburg and a few loyal associates have brought their electric fruit marking machine to such a state of perfection that there are now over seventy machines operating in Florida and California, branding citrus fruits. More machines are being built for use in Northwest packing houses where the branding of apples will be undertaken on a large scale this year.

sion that advertising could be applied to the fruit and vegetable industry without waste if a means could be found for placing a trademark upon the fruit itself to secure identification and prevent substitution.

First he conceived the idea of applying light to the fruit. About that time experiments were being made with a costly and laborious method by putting paper masks on the fruit while still on the tree and letting the sun act upon the pigments in the cells of the skin. Fruit of this kind attracted much attention in at least one of the big New York hotels.

Mr. Ahlburg felt the branding could be quickened considerably and used on a larger scale commercially if ultra-



A Citrus Sale For Growers

Progressive growers who produce citrus of quality are entitled to a sales service that will get them the premium their quality deserves. To growers of this type the American Fruit Growers Incorporated offers a service specialized in selling quality. By its accounts of sales it has proven to growers that efficiency in production pays best when linked up with efficiency in selling. The American Fruit Growers is represented in Florida by a complete

Representation in all carlot markets is one of the fundamentals on which the A. F. G. sales plan is built. From its offices in more than 160 buying centers in the United States and Canada representatives sell to receivers in more than 2,500 cities.

Year round selling of a complete line of fruits and vegetables keep A. F. G. salesmen always in touch with buyers. Few receivers or jobbers specialize in any one fruit. None close their doors when Florida slackens in her shipping of grapefruit and oranges. The buyers operate the year round, not for a season only. Their trade is won by the salesman who can supply all their needs—who can furnish them, not only their requirements in oranges and grapefruit, but their apples, peaches, celery or any one of the fifty odd fresh fruits and vegetables which are shipped in carlots.

Accurate, up-to-the minute market information is wired to the Florida citrus headquarters of the A. F. G. in Orlando by its 166 sales offices. This is supplemented by full reports on supplies and movement of other fruits which might affect

prices of Florida fruits. From the A. F. G. citrus headquarters in Los Angeles, from its apple headquarters in Yakima and Wenatchee, and all its shipping offices come first hand information.

District sales managers, each with twenty to forty offices under him, travel over the market, reporting the trend of the market to the Orlando office, keeping sales forces up to the highest point of efficiency and protecting shipments.

Sales to the best trade is the aim of the A. F. G. Thorough information on all carlot buyers, about their financial standing and their tendencies to reject and claim discounts is on file in the Florida office of the A. F. G. Daily revisions keep this data up-to-date. The information supplied by commercial rating agencies, good in itself but not sufficient for the highest type of selling, is supplemented by the personal knowledge of citrus buyers which A. F. G. salesmen in Florida gained in years of contact and by daily reports from all shipping divisions and all sales offices and district sales managers in the markets. Through

American Fruit C

ORLANDO, FLO



FG

Sales System of Quality

organization of citrus sales specialists headed by men of many years practical experience. Each member of the organization has been selected on the basis of his special knowledge of Florida citrus selling. This organization is supported by complete sales forces in the buying centers. Each salesman, in each market, is picked for his experience in that particular district.

this highly developed information system the knowledge and experience of all A. F. G. salesmen is made available to the Orlando citrus sales force.

Personal representation in all carlot markets gives the A. F. G. a tremendous advantage over less favored sales systems. It makes for prompt acceptances. It prevents unjustifiable rejections and claims for allowances. It assures quick and accurate returns.

Standards in sales practice and methods have been built up by the A. F. G. Each plan that seems to make for improvement has been tested. If found practical it has been adopted. The result is a smoothly working sales system that is of practicable benefit to growers through the better average prices received.

Receivers and jobbers prefer to handle fruit shipped through the A. F. G. because they are given help in selling it. Advertising and personal work among retailers keeps them customers for goods carrying the A. F. G. trademark.

Retailers favor A. F. G. shippers because the American Fruit Growers does not stop at seeing that commodities move from its packing houses to receivers and from the receivers and jobbers to retailers. It helps retailers to sell to the ultimate consumers not by seasonal advertising but by giving continuous publicity the year round to fruits and vegetables sold under its trademark. Advertising by newspapers and other publications, by posters and painted bulletins, by direct mail canvass, demonstrations and motion picture slides informs consumers that fruits and vegetables packed under the A. F. G. trademark are dependable in quality and that no better fruits can be bought than those stamped Blue Goose.

Expert traffic service is maintained by all shipping divisions of the American Fruit Growers. Not only does it maintain a traffic department at Orlando and in all other important shipping districts but also in market centers such as New York, Pittsburgh and Chicago. Personal representatives are maintained at important diversion points.

it Growers Inc.
O, FLORIDA

EVOLUTION OF THE FRUIT BRANDING MACHINE

(Continued from Page 13)

was the first of many models tried. Seventeen machines in all were built before the one now in use was developed. One machine was used only twenty-four hours and then junked because of the weaknesses it developed.

Just a couple of years ago Ahlburg and his associates assembled all the fruit branding machines they made in the course of years and took an inventory before consigning the apparatus to the junk man. They had spent \$35,000.00 on this pile of junk but by a process of evolution they had steadily improved their machine and had weeded out weaknesses until they had developed a type of machine that branded 500 oranges a minute and that required only a few minutes attention each day by an unskilled person.

Machine after machine was built and eventually the inventors saw a successful culmination of their work in sight—they had made a machine that stood up under tests. They secured the services of White & Probst, San Francisco patent attorneys and took out patents on the apparatus. They were fortunate in enlisting the active interest of William K. Smith, one of the patent attorneys. A model machine was built and White & Probst secured patents.

The little band of inventors now incorporated the Electric Fruit Marking Company. This corporation still controls the electric fruit marking machine.

They felt that they were now in a position to go before the commercial growers of fruit. Fruit growers opened negotiations to have the machine tried out in packing houses. Fruit was marked for a few commercial growers with a machine operated by foot power and by hand. Pots of ink were used, the branding dies being automatically dipped in these. The inventors had not yet solved the problem of ink control but they did a highly satisfactory job branding the oranges, proving that even though their apparatus was in need of reinforcement it was commercially practicable. The problem of ink control proved almost as hard a one to solve as heat control. The inventors found it difficult to get an ink that would stay on the fruit. Forty or fifty kinds of ink were tried—all unsuccessful. The ink would carbonize from the heat of the die and would clog up the dies. Ahlburg consulted ink specialists.

THE CITRUS INDUSTRY

On a Christmas Eve the idea came to him which was to solve the problem. It occurred to him then that he might ink his dies with a ribbon like that used on the multigraph or typewriter. First he experimented with a ribbon very much like a multigraph ribbon. Later this ribbon was rejected and a narrow ribbon like a typewriter ribbon was used. By this time the ink specialists had prepared coloring matter that stood up under the heat and made an indelible mark on the fruit.

While operating a machine at Clarendon, California, Mr. Ahlburg became acquainted with Lewis Neuenschwander, a manual training instructor from St. Louis. Mr. Neuenschwander had such faith in the machine that he gave up his school in St. Louis and threw in his lot with the inventors. He gave material aid in the development of some of the mechanical parts of the machine.

Month after month he and Mr. Ahlburg weeded out the weaknesses of the machine until in 1919 they had brought it to a point where it would

ards and the orchards of shippers using the A. F. G. sales service. This trademark, the figure of a Blue Goose, had come to stand for high quality through its use by one of the western shipping companies which was merged with the American Fruit Growers.

The trademarked fruit proved a sensation among wholesalers and jobbers in the fruit and vegetable industry. Backed by a highly selective system of grading it commanded extraordinary prices in the large markets like New York, Boston, Philadelphia and Chicago. The inventors had to work at top speed to supply the demand for machines. Even yet they were not through improving the machine, still better methods of heat control were tried out and eventually they brought the machine to a point where the temperature of the branding dies was automatically regulated according to the temperature of the packing houses so that best results could be secured no matter what the temperature of the fruit.

The machine as it now exists consists of a series of wheels bearing metal dies on their circumference, the wheels are mounted on a shaft, usually seven wheels to a shaft and the dies are heated by electric current. Oranges pour along a run-way by gravity and as they near the machine are turned into seven troughs or runways. There are openings in the runways through which the wheels of the branding machine present the branding dies. The fruit rolls along the trough until it reaches the branding die. As the fruit reaches the die a belt holds it against the die with a very light pressure. Oranges falling along the trough are automatically prevented from crowding the foremost fruits off the dies too quickly. While the die at the top of each wheel is branding a piece of fruit a long ribbon is being fed across the bottom of the machine, inking the bottom dies on each wheel. These ribbons are on spools and operate in the same manner as a ribbon on a typewriter.

The pressure on the fruit is so light that no punctures are made on the skin of the most delicate fruit. Even tomatoes have been fed through the branding machine without the skin being punctured.

In spite of the fact that the machine has reached a point near perfection, Mr. Ahlburg and Mr. Neuenschwander are continually in search for improvements and spend practically all their time in citrus packing houses studying fruit marking.



The Blue Goose Trademark

brand 500 oranges a minute and require scarcely any attention from operators.

About this time the American Fruit Growers Incorporated was organized with sales offices in the principal cities of the United States. Executives of this organization have found through years of experience that quality pays and their principal efforts were turned toward the development of shipping the better quality of fruits and vegetables. Naturally the electric marking machine was of a special interest to them because it afforded a means of identifying quality fruit.

Arrangements were completed with the Electric Fruit Marking Company to install machines in the principal citrus packing houses of the American Fruit Growers Company in Florida and California. Under a single trademark, the American Fruit Growers began shipping the products of its own orch-

Kellers Take Over Grove Heater

On account of the increasing demand for the Oldsmar oil-burning most protectors, Mr. H. D. Keller and his two sons have taken over entire control of the heater business at Oldsmar and have organized the Keller Heating Company, with the following officers: President, H. D. Keller; vice-president and treasurer, H. J. Keller; secretary, Louis B. Keller. In addition to their heaters for citrus groves and truck farms, they are manufacturing a complete line of oil-burning apparatus for heating buildings by means of steam, hot water or hot air. This class of heating appliances is also being used for manufacturing purposes where steam and hot water are used in quantities, such as in laundries. One heater will produce 3000 gallons of hot water a day with a temperature of 180 degrees or more. A battery of heaters will produce any quantity required. A type of house heater has been perfected which can be placed in the ordinary fireplace under perfect control and with no dirt.

The hot-water heater for houses is built on an entirely new principle of combustion and produces hot water in quantities cheaper and quicker than any other appliance on the market. The burner has been perfected so that the heater will make a house warm in winter time in five minutes.

The Keller Heating Company controls the patent rights on all of these appliances south of the Mason and Dixon line and east of the Mississippi River.

At this time of the year when such a line of business might be considered quiet, the company is making up heaters on orders for future delivery, many of them being repeat orders from last fall's customers. More than 22,000 grove heaters have already been sold in Florida by this company, including individual orders running from 500 up to 2,525 to big grove owners at Valrico, Lakeland, Winter Haven, Clearwater, Miami and other large orders from truck farmers at Arcadia and other places. The out-door heaters are used not only for citrus groves and truck farms but also for avocado-pear orchards and ferneries.

The Seaboard Air Line railroad has shown its spirit of co-operation by granting this factory Tampa freight rates, thus enabling this company to manufacture to advantage at Oldsmar.

One big grove owner when placing his order with the Keller Heating

Company said, "I desire to protect with what I consider the best orchard heater on the market."

The Keller Hot Water Heater is something entirely new, but it has been thoroughly tried out and tested and its efficiency proven. This heater, besides being of the highest degree of efficiency, is economical in cost and operation. It is intended for every phase of domestic use, from heating water for the bath to supplying sufficient steam or hot water to heat the largest buildings. This is made possible by the application of the unit system these units being operated in conjunction with each other, making it possible to supply heat, hot water or steam as desired.

The Keller Heating Co. also manufactures a house heater which can be placed in the living rooms to supply heat as needed, and also another style which can be placed in the fire place, and which is known as the "Fire Place Heater." All of these heaters are operated by kerosene or distillate oil, and the amount of heat produced is absolutely in the control of the operator, as much so as in a cooking range.

The construction is such that there is absolute freedom from danger. At the present time, states Mr. Keller, head of the company, inquiries and orders are coming at such a rate that it will soon become necessary to add to the present production equipment.

USE POWER SPRAYER WHEN APPLYING BORDEAUX TO CONTROL ANTHRACNOSE ON WATERMELONS

(By A. P. Spencer, Vice-Director Agricultural Extension Division)

To control anthracnose on watermelons with bordeaux mixture, the first spraying should be made when the vines begin to run, and in the average season repeat this spraying about every two weeks. Seasonal conditions will modify this. If the season is rainy more frequent spraying may be advisable. As this disease must be prevented, it is necessary to apply the bordeaux mixture before the disease gets started. The spores producing the disease, if once allowed to settle on the leaves and start to growing, are difficult to kill; but, if these spores come in contact with bordeaux

mixture before they begin to develop on the leaves, they die and no disease is produced.

In order to spray effectively, one must use a high power sprayer that will develop a pressure of 140 to 200 pounds. A spray pump of this pressure will make a very fine spray and will cause a vapor to settle over the entire surface of the leaf; but, if the pressure is low, a large part of the leaf and stem surface will not be covered and the spray will not be distributed evenly.

Where a good outfit is used, 20 to 30 acres a day can be covered when the plants are small, and from 15 to 20 acres when the crop is well grown. By this means the actual cost of spraying should not exceed \$1 an acre, but this spraying cannot be done effectively or at this low cost with an ordinary hand power or knapsack machine. It will pay to secure a machine of high pressure and with sufficient pressure to equip it with three or four leads of hose. Then the spraying can be done at the proper time and in the right way.

In the citrus area the average power sprayer used in the citrus grove is just as effective for watermelons as for citrus groves. In other territories where the acreage of melons would not justify the purchase of a machine, it would be advisable for two or three farmers to club together.

Anyone desiring more information about spraying watermelons should call upon their county agent. With a large acreage planted it is reasonable to expect that undersized, inferior melons are likely to meet with slow sales this season, whereas good melons usually find ready market.

NURSERY INDUSTRY AT GROVELAND

Groveland Graphic

Messrs. P. H. Miller and J. Harvey from Eagle Lake, Polk county, Fla., came up recently looking for a location for a nursery at Groveland. These gentlemen are now engaged in the Citrus Nursery business at Eagle Lake, having been engaged in it for years. They now have 50,000 trees ready for planting in their present nursery. These gentlemen have practically closed for a location here. They were mighty well impressed with Groveland, which is certainly one of the very best locations in the state for a citrus nursery.

Humus means life to the soil. Don't burn weeds and grass. Plow them under.

Red Scale Controlled by Soap and Oil Emulsion

By J. R. Watson

The Florida red scale, also known as "nail-head" and "round scale" is one of the most destructive insects in the citrus grove. It is not as common as purple scale, but, once it becomes abundant in a grove, it is much more injurious. It lives almost exclusively on leaves and fruit and quickly causes the leaves to turn yellow and drop off. It is harder to kill than purple scale, because of its thicker and larger covering.

The paraffin oils used for purple scale are also used for red scale. There are a number of these oils on the market, but you can make your own by following Yothers' formulas, which are given below:

Whale-oil or any good laundry soap, 6½ pounds, or 1 gallon.

Paraffin oil. 24 to 28 degrees Baume, 2 gallons.

Water, 1 gallon.

Place the soap in the water and then gradually pour in the oil, stirring vigorously all the time. It is essential that a complete emulsion be made. If free oil floats when a little of this material is placed in water, the emulsion is not thoroly made.

Since the World War, the price of whale-oil soap has increased to such an extent that the following formula is cheaper, altho more troublesome to make:

Paraffin oil, 2 gallons.

Water, 1 gallon.

Whale-oil, or any good alkaline soap, 2 pounds.

Heat together to the boiling point and then emulsify by forcing thru a spray pump two or three times. Soft water should be used.

These stock solutions should be diluted with water before using; about 1 part of the emulsion to 25 parts of water is the proper proportion.

When red scale is abundant in a grove the first spraying should be followed by a second one a month later. The spray does not kill the eggs under the old matured females. Within a month these are hatched out and can be killed by a second spraying.

The three scale fungi which are beneficial in keeping down purple scale do not readily attack red scale; but another one, called the "pink fungus," is very beneficial. One should introduce this fungus into his grove, if he has much round scale. This can be done best at the beginning of the rainy season, in June or July. Secure

the pink fungus from a neighboring grove, place it in water and stir until most of the spores are washed off. Then strain and spray this water onto the trees. Or, if one has only a few young trees, the quickest way would be to place the leaf with the pink fungus on it in a pan of water and dip some of the branches of each tree into the pan. This can be done simply by bending the branches over into the pan.

HOW TO MAKE SPRAY MIXTURES

5—Arsenate of Lead

This is the standard poison for chewing insects and may be obtained on the market in the form of either a paste or a powder. The paste form is used at the rate of two pounds to 50 gallons of the spraying solution, while the powdered form is used at the rate of one pound to 50 gallons of spray. It is well to mix the arsenate of lead with a small amount of water before putting in the spray tank.

6—Cold-Stirred Oil Emulsion

Whale oil soap— 8 Lbs. or 1 Gal.
Paraffin oil. 24 to 28 degrees

Baume -----2 Gals.
Water -----1 Gal.

Mix the soap and water, then very slowly and gradually add the oil in small quantities at a time, meanwhile stirring the mixture vigorously in order to thoroughly mix the ingredients. Test frequently by adding a little of the mixture to a cup of soft water. If no oil floats, the mixture is perfect, otherwise, add more soap and stir again. The above quantity is sufficient for 200 gallons of spraying solution, and when thus diluted contains one per cent of oil.

7—Boiled Emulsion

Paraffin oil -----2 Gals.
Fish oil Soap -----2 Gals.
Water -----1 Gal.

Put all of these into a vessel that will stand fire, and heat to the boiling point. While still very hot, pump the material through a bucket spray pump into another vessel and then back again to form a perfect emulsion. The mixture then is ready for use. Dilute with 200 gallons of water. Potash fish oil soaps are the best to use in making oil emulsions.

8—Distillate Oil Emulsion

Boiling water -----12 Gals.
Fish oil soap -----30 Lbs.

Distillate oil. 30 to 34 degrees

Baume -----20 Gals.

Dissolve the soap in the hot water, and while stirring vigorously add the distillate slowly. Then pump under high pressure through spray nozzles into storage vessels. For use, dilute 2 3-4 gallons of this stock solution with 50 gallons of water, for thrips. When diluting, put the stock solution in the spray tank and agitate while adding the water. Nicotine should not be added until dilution is complete.

About Commercial Spray Mixtures

There is more or less difficulty in mixing spray materials at home, and the work always is mussy. But in recent years practically all kinds of spray materials are to be obtained on the market in a concentrated form, needing only the addition of water to make them ready for use. In many instances such materials are more economical to use than to attempt the home manufacture from raw materials.

Of the oil sprays, there are many brands. Some of them have come into extensive use in all parts of the country, while others, particularly those made from heavy oils, and chiefly of use in spraying citrus fruits, are to be obtained in those localities where they are most extensively used. In Florida, the Gulf coast and California, highly efficient oil sprays may be obtained in commercial forms.

For the person who needs but a small quantity of Bordeaux mixture, or the commercial grower who is not equipped to make this highly efficient fungicide in a large way, there are a number of commercial brands of this spray material in both paste and powder forms.

Tobacco preparations, for use in controlling certain very troublesome sucking insects, are much more satisfactory when obtained in commercial form than when made at home. The commercial article is of uniform strength, and much more dependable than that which is made at home.

Work your horses with collars that fit, keep the collars and pads clean, keep the harness in adjustment and you will not have sores to bother and irritate. Prevention is better than cure.

Nitrogen is the dearest fertilizing element. It exists in the air in untold quantities. Plant legumes—cowpeas, velvet beans, peanuts, etc.—and let them gather this nitrogen for you even while you sleep.

Market for American Fruit in Europe

A shortage of dried fruits in the United Kingdom, together with the rise in exchange and the drop in freight rates, should stiffen prices until the new crop reaches the English market in October, according to a report to the Department of Commerce from Vice Consul Howard Donovan at London. Sales of California raisins would be larger if they arrived in time for the Christmas trade and if they were packed, like the Spanish product, in 7-pound tins, faced and scalded, giving them the golden brown color which attracts buyers. Smyrna sultans offered at lower prices than California seedless raisins, are furnishing competition difficult to meet. The amount of dried currants and raisins entered for consumption was appreciably larger in 1921 than in the previous year. Stocks of California and Oregon plums and prunes, and of dried apricots, pears, and peaches in London bonded warehouses at the end of the year considerably exceeded those of 1919 and 1920.

The oranges, mandarins and bananas

as seen in the best shops of France are not of a quality to attract the notice of an American tourist, writes Vice Consul J. Lee Murphy from Nantes. Grapefruit is practically unknown. If American shippers can meet the market with the adverse exchange rate and the long-haul freight charges they may be able to do some business on a consignment basis with regular buyers.

During 1921 the United States furnished practically all the imports of dried apples and pears into the Netherlands, the Department of Commerce is informed by Consul General George E. Anderson, Rotterdam, who says there is a steady demand for these products. American exporters also sold 53 per cent of the canned fruit and 25 per cent of the preserved fruit purchased by the Netherlands last year. The fall in value of the German mark in 1921 enabled Hamburg jobbers to sell American dried prunes and apricots in the Dutch market at prices lower than those obtaining in the United States.

Study Trees This Spring

"A great many public school teachers are so deeply engrossed in ramming dead languages, mathematics of the seldom-if-ever-used type, and various other kinds of educational junk down the little pink throats of their bewildered pupils that they have no time to show them the wonderful worth-while creations of nature to be found in rich profusion in the vicinity of every school house.

"The average boy or girl (particularly those in the cities) cannot tell the difference between any kinds of trees or manufactured wood," writes Quaker O'Taylor in the National Republican (Washington). "And aside from the robin, sparrow, crow and blackbird they haven't the remotest idea as to the names of the many American birds.

"Fortunately, however, a few schools are now devoting a little time to 'nature study.' The public schools of Washington, D. C., have caught the fever, and the youngsters of this city are highly elated over the fact that they are now being taught the names of every variety of tree and the various uses man makes of them; also the names and habits of the birds of the

District of Columbia. It is claimed the boys and girls display more enthusiasm in this line of study than any other.

"When time permits, the youngsters are taken to the parks and along streets planted with different kinds of shade trees. The greater part of the teaching, for obvious reasons, is done indoors.

"According to Susan S. Alburtus, of the schools of Washington to teach trees in a limited time indoors so that they may be recognized in the open requires careful lesson planning, and the use of much illustrative material. This material consisted of medium sized branches of trees; collections of nuts and tree seeds; wood sections and pieces of bark and pictures. The latter were obtained from the American Forestry Association. Wood sections and specimens of bark were gathered in suburban sections where real estate operators were 'improving' land by cutting down the trees. The city tree planting department granted permission to the teachers to cut sprays from the street trees in order that every class might have a spray of each kind studied, to press

and mount on herbarium paper. The teachers aimed to teach two trees in a lesson as teaching by comparison covers ground in tree work. Leaf arrangement, shape, color, fruits bark of both old and young wood; shape of tree; its value in street planting were matters of observation.

"At the close of each lesson assignments were given to committees of children to be completed before the next visit of the nature study teacher. These assignments sent the children to all parts of the city after school and on Saturdays, for the first hand information; others referred them to books. Within a short time the supply of books in the Public Library was exhausted. The adult population became interested in trees in order to answer the questions of the children. So many questions and so much information awaited the nature study teachers that frequently the time for the new lesson was much shortened."

OLDSMAR CONCERN IS DEVELOPING NEW TRACTOR

The Oldmar Manufacturing Company has been incorporated to do a general machine shop business in Oldsmar, with a drafting department, pattern shop and foundry in connection. This company is now doing machining for the Keller Heating Company on their grove, house and tank heaters, etc. Mr. E. J. Jenkins, the president and general manager of this new corporation, is a member of the Society of Automotive Engineers and has had ten years experience in the tractors business. He is working on two new types of tractors which are expected to be a big advance on anything heretofore built for Florida groves and truck farms. They will have four-cylinder motors with reverse action built low, to get under and close to fruit trees, with tools really adapted to Florida, including a special double disc.

The company is manufacturing lightweight, cast-iron pistons fully equipped, also rings and pins, for replacement in most types of cars. A gas and oil service station is also operated by this concern. Mr. James H. Thompson is vice-president of the corporation and the secretary-treasurer is Charles E. Ecker.

There isn't anything living or dead that is filthier, more vulgar, less refined or more destructive of life than the house fly. Every one killed in spring means several million less in mid-summer. So get to swatting.

Di Giorgio Fruit Corporation Buys Lucerne Park Fruit Association

What is considered the largest deal in the citrus industry of the State since the affiliation of the Standard Growers Exchange with the Florida Citrus Exchange, was consummated last week at Tampa, when the DiGiorgio Fruit Corporation purchased the Lucerne Park Fruit Association.

The deal was handled by Mr. D. C. Gillett, Treasurer of the Lucerne Park Fruit Association and Mr. W. A. Blackmon, Vice-President of the DiGiorgio Fruit Corporation.

The Lucerne Park Fruit Association is a corporation under the laws of Florida, and their principal business is the growing of citrus fruits. They own 1700 acres of excellent land in the heart of Polk County, the greater portion of which is planted to citrus. The property is situated on the main road between Haines City and Winter Haven, and for a number of years has been referred to as Florida's Greatest Grove.

The Lucerne Park Fruit Association was organized by Mr. D. C. Gillett and

under his management has been very successful. The new officers of the Association are:

D. C. Gillett, president.

B. J. Christman, vice-president.

V. B. Newton, Treasurer

LeRoy B. Giles, Secretary.

The DiGiorgio Fruit Corporation owns the Standard Growers Exchange and also the T. J. Peters tomato farm, and are reputed to be the largest growers and shippers of fruit and vegetables in the world. They own and have under long term lease, 61,000 acres which is well distributed throughout the United States, Cuba, Mexico and South America. Of this amount 7000 acres are in Florida, 3000 of which is in citrus groves, and 4000 in vegetable farms. The DiGiorgio Fruit Corporation also owns and operates a large Steamship Line which is devoted principally to the handling of fruits. Mr. Jos. DiGiorgio of New York is President of the DiGiorgio Fruit Corporation and probably is the best known fruit man in America.

oil injury following is not so serious and usually gives rise to smooth russet.

The immediate and most striking loss to growers, due to the unhindered development of rust mites in bearing groves, may be summed up as follows: (1) By extracting the oil from the leaves and fruit, interfering with the normal development of the fruit. (2) By discoloring the rind of the fruit, detracting from the appearance of the fruit and lowering the price. (3) By reducing the size and increasing the number of culls. (4) By delaying the coloring of the fruit, so that it cannot be marketed early.

It seems advisable to state that the ideas to emphasize particularly in regard to rust mites are thoroughness and timeliness of application. The most harmful attitude in spraying your citrus trees is to assume that even though you are not doing the work to meet these tests you will get them next time. This attitude is certain to give a large quantity of russeted fruit. The correct solution of this delusion is to spray each and every time just as thoroughly as though you never expected to spray those trees again.

When most of the bloom is shed and where mites are present, apply lime sulphur solution at the rate of 2½ gallons to 100 gallons of water. A second application should be made in from one to three weeks for grapefruit particularly.

Golden, Bright Fruit is Most Profitable

By G. F. Moznette, Entomologist, U. S. Department of Agriculture, Miami, Fla.

The writer has been prompted in writing this short article, due to the fact that considerable russeted grapefruit and oranges were present in citrus groves the past year; and also that the dry weather conditions existing at this time are most favorable for much damage the coming season. This will be evidenced where spraying is not practiced or where thorough and timely spraying is not followed.

Russeted fruit never brings the same returns to the grower as golden and bright fruit, and the very tiny creature responsible for blemishing oranges and grapefruit, either by russetting or "tear-staining," is the rust mite.

Strange as it may seem, the rust mite is not an insect, but is related to the common spiders and is also a close relative to the "red bug," termed a bug but in reality a mite. Rust mites under the hand lens appear as very minute particles of yellow dust, and at this time of year are most prevalent on the leaves, waiting for a chance to gather on the young developing fruits. Because of their small size, rust mites

are often overlooked and the grower may think nothing of the condition which may result. They are getting in their work while the fruit is young and green, and the injury caused by the mites is gradual, and it is the resultant injury as the season advances that is most striking.

The grower should not wait until his fruit has commenced to russet, but should examine his trees carefully at this time for the presence of this pest. If the rust mite is present, spraying measures should be applied just as soon as most of the bloom is shed.

Rust mites feed by puncturing the surface of the leaf or fruit, extracting the oil. All the oil oozing from the points of attack, however, is not taken up by the mites and spreads out over the fruit, and with the aid of heavy dew often run down the sides in narrow bands. On exposure of this liquid to the air it is oxidized, with the result that the rind turns a russet brown and fails to develop normally. The rough russets due to the early attack of rust mites are commonly called buckskin or "shark-skin" fruits. In case rust mites do not become very numerous until after the fruit has attained considerable size, however, the

NEW EMPLOYEE OF PLANT BOARD HAD EXPERIENCE IN CUBA

Reginald Hart, who has spent several seasons with the Cuban Agricultural Experiment Station, doing plant sanitation work, has been employed by the State Plant Board of Florida. He will do regular inspection work.

Mr. Hart, a native of Vermont, holds a bachelor of science degree from the Massachusetts Agricultural College where he graduated in 1916. As a student he specialized in entomology and forestry. After graduation he became deputy nursery inspector for Massachusetts, which position he held satisfactory for several months.

He was later connected with the Cuban Agricultural Experiment Station for a year and a half, and still later with the Cuban Bureau of Plant Sanitation. His principal work in the latter was in the inspection of plants and fruits and the eradication of injurious insects and diseases of these plants and fruits.

Plan to Plant Another Tree

It is a far cry from the bleak prairie-kissed landscape of Florida; yet the two states have at least one interest in common—that of re-forestation and the preservation of native timber.

Florida has awakened to this necessity and the subject is being discussed in many quarters. That Illinois is none the less interested is shown by the following paper by Frank Ridgeway in the Chicago Tribune. Mr. Ridgeway says:

"Plan to Plant Another Tree" is the slogan now being thrown on the screen, written on blackboards, streaming from the sides and backs of automobiles, printed on windows, and heralded from pulpits, and banquet tables in towns, rural schools, and churches in every corner of Illinois. This is being done in an effort to aid in the reforestation of the Prairie state and to revive interest in the establishment or rejuvenation of farm orchards, and the planting of home grounds in both city and country.

No campaign since the floating of Liberty loan bonds has created such wide interest and general support as has this tree planting plan. Civic and agricultural societies and organizations are uniting with the press in supporting this movement to make Illinois more fruitful and beautiful. Ninety-five farm advisers have put all their forces into the harness to make the project a success. Organizations of farmers' institutes in almost every county and hundreds of farmers' clubs are helping. Committees of chambers of commerce in town all over the state are being appointed to help stimulate interest in planting trees, shrubs, and flowers. Many clubs, including the Kiwanis, Rotary and Lions, are co-operating by having speakers at their luncheons to present the tree planting plan.

Engaging Children's Help.

Schools are expected to aid by having pupils take a census of the trees in the district or township in which they are located. This is considered an important feature of the movement, because in counting the trees children will become familiar with the different kinds that grow in their part of the state. Teachers and officers from the state and county superintendents to the teachers in the smallest schools, realize the value of this plan, and are whole heartedly supporting it.

The plan has a particular appeal to boy scouts. The whole army in this state is being lined up to back the

movement.

Y. M. C. A. organizations, bankers' associations, advertising clubs, Audubon societies, women's clubs, and churches have all recognized the value of encouraging the planting of more trees and shrubbery and are aiding wherever they can to carry out the plan.

Nurserymen to Give Trees.

An appeal was made several weeks ago to members of the Illinois State Nurserymen's association, which was recognized as being the most logical organization to consolidate the interests of all other clubs, to combine the efforts of all these organizations so that effective work could be done in time to plant this spring Nurserymen purpose to give a tree to each school in the state to aid in starting the movement with a practical demonstration of how three planting plans may be put into practice. The only requirement is that school children must cast votes to determine the most popular tree for their school. This is done to create interest in tree planting on Arbor Day.

Through Francis Blair, state superintendent of schools, various organizations interested in this project are going to urge Gov. Small to fix first Friday in April as arbor day each year. This is the best Friday in the month to set trees, tree specialists say. Arbor day has usually been the last part of April, which is rather late for setting trees in this state.

Leaders of the campaign are merely asking clubs to stimulate interest and encourage people to think about their planting in advance—some time in March—and the trees should be set in April.

Shortage is Serious.

In calling attention to the seriousness of the shade tree and fruit tree shortage in this state and the great need for the cooperation of all organization in bringing about a reforestation of Illinois, A. J. Young, Aurora, head of the planting project, says that practically no effort is being made to replace trees that are cut down by thousands in this state every year. He says you can drive in any direction from Chicago and find wood lots in which thousands of stumps are left standing, but it is only in rare cases you find young trees set out to replace them.

He predicts that unless trees are planted every season to take the place of those cut down within a com-

paratively few years this state will be practically destitute of good shade trees. Mr. Young thinks some startling facts would be revealed concerning the rapid disappearance of trees in Illinois if they were recounted every five years.

Advantages of planting trees consist in developing the landscape, bringing to farms insect gathering birds that protect crops, cooling the atmosphere, aiding architecture, and adding value to farm and city property. In fact, there is no quicker way of increasing the value of property than by planting trees and shrubs.

If every person in Illinois would plant a fruit tree it would add 144,117 acres to the state's orchard. Tree planting should not be limited to any single group of people, for there is much of it needed along roadsides, in orchards, home grounds, private and public park, cemeteries, farm wood lots, wind breaks, and on the grounds around schools and churches and country clubs. Every city has its waste corners that could be made beautiful with a few shrubs and trees.

The state wide project will in many cases be linked up with the soldiers' memorial tree planting scheme that was launched last year by The Tribune. Clubs and organizations are boosting the particular kind of planting that is needed most in their communities. Many have already started in this spring to encourage memorial tree planting as their part of the tree planting program. This will add many thousands to the state's highway trees.

Dr. J. C. Blair head of the department of horticulture at the University of Illinois, has had his entire staff at work on plans to aid in making the campaign a success. He says he thinks it an excellent idea.

W. S. Brooks, secretary of the Illinois Horticultural society, says his organization considers the plan O. K., and will support it.

Officers of the Illinois Farmers' institute commend the plan. "It is certainly a creditable effort. There is no question but that Illinois needs more trees and that a movement of this kind will help to make the state a better place in which to live."

Hopes for Its Success

"The 'Plan to Plant Another Tree' as outlined has the hearty approval of the American Forestry association, and our sincere hopes for its success," writes its officers.

Lumber for Crate Material in Spain

Consul Henry C. A. Damn, Valencia.

Valencia's chief exports are fruits and vegetables, principally fresh, and to a lesser degree dried and canned. As the shipments are made in wooden crates and boxes, large quantities of shooks and box material are annually required. It is not possible to give the exact number of boxes and crates used, because there are a great number of firms, large and small, engaged in manufacturing them and the official export statistics state the quantities in kilos and not in number of packages. A trade journal published at Denia in the interest of fruit and vegetable growers and exporters reports that nearly 9,000,000 cases were required in 1920 for the Levante section of Spain, which practically coincides with the Valencia consular district.

The official export statistics for 1920 give the quantity of fruits and vegetables exported through the port of Valencia as 238,000 metric tons. Alicante, another seaport in this district, exports fruits, vegetables and especially almonds; Denia, also a seaport, is noted for its raisin exports.

Sources of Box Shooks.

So far Valencia has depended almost entirely upon Spanish lumber for packing material. There are considerable areas of forests in Spain of an inferior pine, the wood of which is practically useless for any industrial purposes except box and crate making. Northern European and Austrian spruce is used for a better grade of boxes. Portugal and France at one time furnished some lumber from their pine forests, but the war has largely depleted them, and there is little lumber to spare for export. Sooner or later the Spanish forests will be unable to supply the demand for box and shook material and importations on a considerable scale will have to be made.

Until now the United States has supplied only a small part of the demand, because we could not compete with the cheap Spanish, Portuguese and French lumber. These conditions have changed, as prices for Spanish material are now 125 to 150 per cent. higher than they were in 1914.

Openings for American Shooks.

The Spanish customs duty on box shooks, whether made up into containers or in a knocked-down condition, is 2:10 pesetas for 100 kilos, but the duty is remitted if the boxes are exported filled with Spanish products. The advantage in sending over

shooks instead of lumber is, therefore, that no duty is paid, and, furthermore, American shooks made into crates and cases enter the United States free of duty when used as containers for imported foreign products.

The requirements of this market are that the material be well seasoned, well manufactured, and cut exactly to dimensions specified; c. i. f. quotations would probably be expected. The packers and smaller box makers do not care to buy more material than immediately needed; so the general distributor must, therefore, have facilities for storing stock. Most of the large packers buy the material and make the crates and boxes by hand at their packing houses. It may therefore be desirable to make arrangements for the bunching of orders.

Methods of Entering Market.

One difficulty American manufacturers of shooks would encounter is that cases, boxes, and crates are not standardized, many styles and sizes being in use.

Probably nothing of value in the way of introducing American box shooks in Spain can be accomplished by correspondence. The field should be investigated by a person thoroughly familiar with the shook business who has the necessary technical knowledge to look intelligently into the matter of requirements as to material, styles, sizes, dimensions, storage and other details. A full line of samples should be shown of the various woods available for box and crate making.

It should be remembered that Valencia is only one of many Spanish ports requiring box and crate material. Almeria requires tens of thousands of barrels for its fresh grapes; Malaga ships raisins and almonds in great quantities; Seville exports oranges, lemons, and other fruits, and quantities of olives. It might be of advantage to establish warehouses in several of

Valencia Late oranges sold on March 13th for \$6.50 per box f. o. b. point of shipment. Similar High prices for Valencias are obtained practically every season. The growers who produce Valencias are the money makers of Florida's citrus industry. We can supply Valencia Late trees on rough lemon stock to buyers who place their orders now.

BUCKEYE NURSERIES INC.

Tampa, Florida

the leading export districts, from which the packers in those regions may be supplied.

Staves and Cooperage.

The United States has for many years been an important source of supply of staves and cooperage, both for making wine casks and for the barrels in which the Almeria grapes are shipped. Staves probably formed the principal cargoes of the many sailing vessels flying the American flag that came to Spanish ports for cargoes of wines and fruits during the first 60 years of the last century. In 1920 there were imported from the United States into Valencia 263 metric tons of casks and 1,653 metric tons of staves.

MONEY SAVED FOR THE GROWER

"The old spraying machine is liable to be set aside as a thing no longer needed except for scale insects and white flies, so far as injurious insects are concerned."

"But what does this mean?" asks the trucker and the grower.

"Simply this," says Professor J. R. Watson, entomologist of the Florida Experiment Station; "dusting instead of spraying for the control of insects is rapidly becoming possible, practical and more convenient. Dusting plants and trees for the control of insects is cheaper than spraying. True, more material is necessary in order to dust than to spray, but dusting can be done more cheaply than spraying. In addition, much of the labor necessary in spraying is not necessary in dusting. Practically all insect enemies, except scale insects and white flies, can be controlled by dusting."

The foregoing information should be of great interest to the growers and truckers of Florida as well as of other states. Spraying always has been one of the farmer's big and disagreeable problems. Now, that dusting may replace it largely, much of his valuable time and money can be diverted to other phases of his business.

There is about as much danger of getting too much milk in the diet as there is of breathing too much pure air.

Clip your farm animals of their heavy winter coats lest they catch colds. If you prefer not to clip them, feed a bran mash once a week or a little linseed meal twice a week for three or four weeks.

